The following Listing of the Claims will replace all prior versions and all prior listings of the claims in the present application:

Listing of The Claims:

1. (Currently Amended): A carbon nanotube array ~~device~~ comprising:

a) at least one nanotube tubule with a proximal end and a distal ~~ends~~ end, said proximal end ~~being~~ attached directly to a substrate; ~~,further comprising~~

b) a metallic material ~~capable of providing a surface for binding~~ attached to at least a portion of the carbon nanotube tubule including the distal end; and

c) an electrically conductive biological ~~compounds coated or adsorbed thereon~~ compound, wherein the electrically conductive biological compound is attached to the metallic material.

2. (Currently Amended): The carbon nanotube array of claim 1 comprising at least one pair of electrically conductive aligned nanotube tubules positioned proximally on a substrate surface such that their distal ends are ~~capable of being~~ bridged by ~~a material, rendering them electrically conducting~~ the electrically conductive biological compound.

3. (Original): The carbon nanotube array of claim 1 wherein the nanotube tubule is a single wall or a multi-walled carbon nanotube.

4. (Currently Amended): The carbon nanotube array of claim 1 wherein the metallic material comprises at least one ~~metallic compound~~ metal, an alloy or combinations thereof.

5. (Original): The carbon nanotube array of claim 1 wherein the metallic material is selected from the group consisting of gold, silver, platinum, copper, nickel, cobalt and aluminum.

6. (Original): The carbon nanotube array of claim 1 wherein the metallic material is gold.

7. (Original): The carbon nanotube array of claim 1 wherein the metallic material is located at the distal end of the nanotube tubule.

8. (Currently Amended): The carbon nanotube array of claim 1 wherein the metallic material is present as a surface coating on the carbon nanotube tubule.

9. (Currently Amended): The carbon nanotube array of claim 1 wherein the metallic material is present as a particulate at the terminal end of the carbon nanotube tubule.

10. (Original): The carbon nanotube array of claim 1 wherein the metallic material comprises a polymeric or glass bead wherein surface of said bead contains a metal deposited thereon.

11. (Currently Amended): The carbon nanotube array of claim 1 wherein the substrate is a ~~metallic or~~ non-metallic material.

12. (Currently Amended): The carbon nanotube array of ~~claim 1~~ claim 11 wherein the substrate is ~~a~~ an electrically semi-conducting material.

13. (Currently Amended): The carbon nanotube array of ~~claim 1~~ claim 12 wherein the substrate is silicon.

14. (Currently Amended): The carbon nanotube array of claim 1 ~~further comprising at least one~~ wherein the electrically conductive biological compound ~~wherein said biologically occurring compound immobilized on~~ is chemically bonded to ~~the surface of~~ the metallic material ~~of individual nanotubes comprising the said carbon nanotube array~~.

15. (Canceled)

16. (Currently Amended): [[A]] The carbon nanotube array of ~~claim 15~~ claim 1 wherein an electrical contact is established by the electrically conductive biological compound between at least two ~~nanotubes~~ nanotube tubules in the ~~said~~ carbon nanotube array ~~by the surface immobilized biological compound~~.

17. (Currently Amended): The carbon nanotube array of ~~claim 15~~ claim 1 wherein the electrically conductive biological compound is immobilized on the surface of material via surface adsorption, ionic bonding, hydrogen bonding or covalent chemical bonding.

18. (Currently Amended): The carbon nanotube array of ~~claim 15~~ claim 1 wherein the electrically conductive biological compound ~~is chemically derivatized to include~~ includes a substituent selected from the group consisting of thiol, thiophenol, thiocarboxylic acid, carboxylic acid and disulfide.

19. (Original): The carbon nanotube array of claim 18 wherein the substituent is a thiol.

20. (Currently Amended): The carbon nanotube array of ~~claim 15~~ claim 1 wherein the electrically conductive biological compound is a nucleic acid, oligonucleotide, amino acid, enzyme, protein or segments or derivatives thereof.

21. (Currently Amended): The carbon nanotube array of ~~claim 15~~ claim 20 wherein the electrically conductive biological compound is a chemically derivatized nucleic acid, amino acid enzyme, protein or a segment thereof.

22. (Currently Amended): The carbon nanotube array of ~~claim 15~~ claim 1 wherein the electrically conductive biological compound is DNA, RNA, or segments or derivatives thereof.

23. (Currently Amended): The carbon nanotube array of ~~claim 15~~ claim 1 wherein the electrically conductive biological compound is single-stranded DNA, derivatized single-stranded DNA or segments or derivatives thereof.

24. (Currently Amended): A molecular sensor device comprising:

a) a carbon nanotube array ~~device~~ comprising at least one pair of carbon ~~nanotubes that are further comprise;~~ nanotube tubules attached directly to a substrate;

b) a metallic material attached to at least a portion of the carbon nanotube tubules including their distal ends; and

~~b)~~ c) a biological compound immobilized on the metallic material, ~~a surface immobilized layer of at least one sensor agent deposited on said nanotubes so as to provide~~ wherein the biological compound is electrically conductive and provides an electrical contact between ~~said~~ the pair of carbon ~~nanotubes~~ nanotube tubules. ~~, said electrical contacts being capable of conducting an electrical charge.~~

~~wherein said sensor agent is capable of interacting with a target species so as to produce a change in electrical conductivity of the said sensor device.~~

25. (Currently Amended): The molecular sensor device of claim 24 wherein the carbon ~~nanotubes~~ nanotube tubules are single walled or multi-walled.

26. (Currently Amended): The molecular sensor device of claim 24 wherein the metallic material comprises at least a one ~~elemental~~ metal, a metallic alloy or combinations thereof.

27. (Original): The molecular sensor device of claim 24 wherein the metallic material is selected from the group consisting of gold, silver, platinum, copper, nickel, cobalt and aluminum.

28. (Original): The molecular sensor device of claim 24 wherein the metallic material is gold.

29. (Currently Amended): The molecular sensor device of claim 24 wherein the metallic material is located at the distal end of the carbon nanotube tubule.

30. (Currently Amended): The molecular sensor device of claim 24 wherein the metallic material is present as a surface coating on the carbon nanotube tubule.

31. (Currently Amended): The molecular sensor device of claim 24 wherein the metallic material is present as a particulate at the terminal end of the carbon nanotube tubule.

32. (Original): The molecular sensor device of claim 24 wherein the metallic material comprises a polymeric or glass bead wherein surface of said bead contains a metal deposited thereon.

33. (Currently Amended): [[A]] The molecular sensor device of claim 24 wherein an electrical contact is established between at least two ~~nanotubes~~ carbon nanotube tubules in the ~~said~~ array by the surface immobilized biological compound.

34. (Original): The molecular sensor device of claim 24 wherein the biological compound is immobilized on the surface of material via surface adsorption, ionic bonding, hydrogen bonding or covalent chemical bonding.

35. (Original): The molecular sensor device of claim 24 wherein the biological compound is chemically derivatized to include a substituent selected from thiol, thiophenol, thiocarboxylic acid, carboxylic acid and disulfide.

36. (Currently Amended): The molecular sensor device of claim ~~24~~ 35 wherein the substituent is thiol.

37. (Original): The molecular sensor device of claim 24 wherein the biological compound is a nucleic acid, amino acid enzyme or protein or derivatives thereof.

38. (Original): The molecular sensor device of claim 24 wherein the biological compound is a chemically derivatized nucleic acid, amino acid enzyme, protein or a segment thereof.

39. (Currently Amended): The molecular sensor device of claim 24 wherein the ~~biologically occurring~~ biological compound is selected from the group consisting of DNA, RNA, and segments or derivatives thereof.

40. (Original): The molecular sensor device of claim 24 wherein the biological compound is single-stranded DNA, derivatized single-stranded DNA or segments thereof.

41. (Currently Amended): The molecular sensor device of claim 24 that is capable of sensing and detecting[[,]] microorganisms, viruses, toxins, proteins, nucleic acids, amino acids, enzymes and biologically active chemicals.

42. (Original): The molecular sensor device of claim 41 wherein the microorganisms are pathogenic bacteria, yeast or fungi.

43. (Original): The molecular sensor device of claim 42 wherein the microorganism is Bacillus anthtracis (anthrax).

44-59. (Canceled)

60. (New): The molecular sensor device of claim 24 wherein the electrical contact between the pair of carbon nanotube tubules provides electrical charge conduction.

61. (New): The molecular sensor device of claim 24 wherein the biological compound interacts with a target species to produce a change in electrical conductivity in the sensor device.